2013
WISCONSIN CANADA GOOSE HARVEST REPORT
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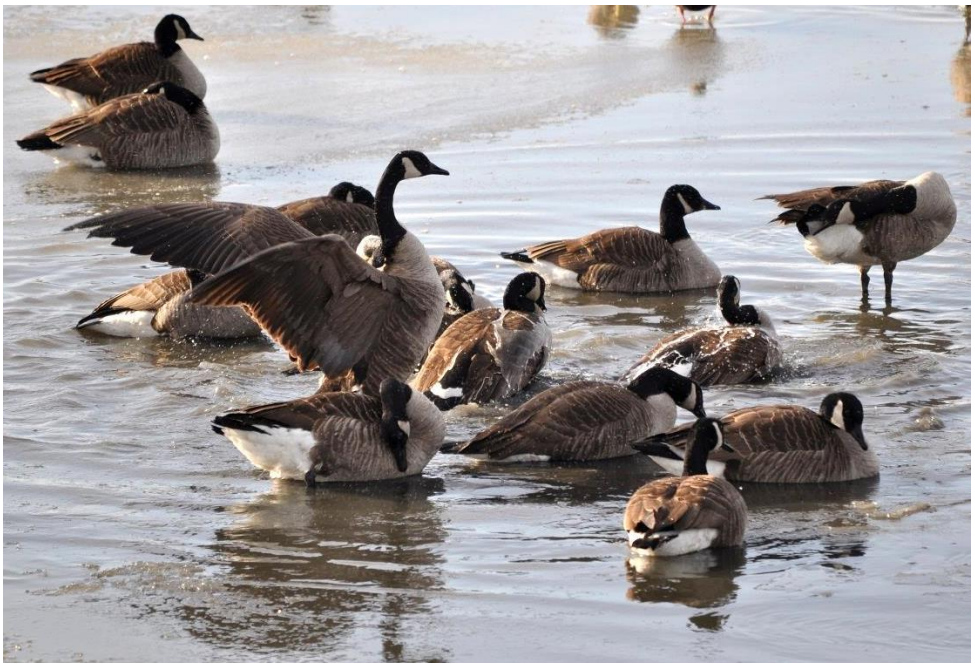

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Season/ Zone	2013 Estimated Canada Goose Harvest
Early	19,407
Horicon	6,799
Exterior	37,984
TOTAL	**64,190**

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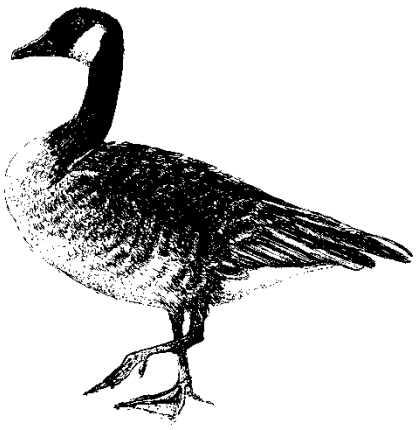

WISCONSIN 2012 CANADA GOOSE HARVEST REPORT

INTRODUCTION

The management of Canada goose populations and hunting recreation has been a social and biological challenge for the state of Wisconsin since the 1950s (Miller 1998). Continental Canada goose management is based on several different breeding populations. The fall harvest of Canada geese in Wisconsin consists primarily of two populations. One population is the Mississippi Valley Population (MVP) that breeds along the southern Hudson Bay Coast in Ontario and migrates south primarily through Wisconsin and Michigan, and then Illinois, Indiana and western Ohio. Traditionally, many MVP geese wintered in Kentucky and Tennessee, and sometimes as far south as Mississippi (Brooke and Luukkonen 2010, Leafloor et al. 2003). However, in recent years many are wintering as far north as northern Illinois and southern Wisconsin. A second major population of geese contributing to Wisconsin's harvest is the resident or giant race which breeds in WI. Based on banding data, a small percentage of Wisconsin's goose harvest (~2%) also comes from the Eastern Prairie, Tall Grass Prairie and Southern James Bay Populations. The Mississippi Flyway Council (MFC) was established in 1952 to work cooperatively among the states, provinces and federal governments in the management of migratory birds and in 1956 the MFC established a Canada Goose Committee to manage the harvest and distribution of several Canada goose populations in the Flyway.

In the 1950s the MVP was the primary population of Canada geese in Wisconsin while the giant race was considered nearly extinct in the Flyway. During this period, the Horicon National Wildlife Refuge (NWR) in WI began managing specifically to support migrating MVP during the fall. Landscape changes, Horicon refuge management and an expanded refuge system in Illinois all contributed to an increase in fall/winter Canada goose populations and harvest levels in both states. In 1960 Wisconsin and Illinois agreed to establish a harvest quota system to cooperatively manage goose harvest and despite a number of changes, a quota system remained through 2006. During the early 1960s MVP geese steadily increased in numbers at Horicon with fall numbers exceeding 100,000 geese and harvest near 1,000 geese per day for only a 9 to 11 day season. This growing fall goose population began to cause significant agricultural crop depredation in WI and complaints by hunters in states to the south that WI was short stopping geese (Miller 1998). In 1965 agricultural damage payments began as a result of goose depredation in east central WI. Over a period of several years in the 1960s; social, political and biological forces surrounded goose management and resulted in actions such as hazing and a harvest of 30,000 geese in 3 days of shooting in 1966. In 1965 the MFC agreed to a winter Flyway population objective of 200,000 and in 1969 this was increased to 300,000. Several states in the Flyway wished to see an increase in the MVP goose population and a greater distribution of these birds to the south of WI while WI managers continued to express concern over increased goose concentrations in east central WI.

In the 1970s up to 80% (250,000-300,000 birds) of the MVP winter population stopped at Horicon and surrounding areas (Miller 1998). Agricultural and biological concerns over this concentration of birds led to the 1976 management strategy to reduce the peak fall population

and encourage birds to move south. Altering land management in the Horicon NWR, and increased harvest and disturbance helped to move geese out of the refuge but not necessarily to locations outside of WI. However, many hunters and goose watchers in Wisconsin opposed these efforts to redistribute goose concentrations. A number of biological and political concerns complicated management efforts. In 1979 the MFC prepared the first Flyway-wide management plan for the MVP in an attempt to create a more scientifically based management strategy. Revisions of this plan continue to guide the management of the MVP population with the most recent revision in 2010 (Brook and Luukkonen 2010).

Meanwhile, a few small remnants of the giant race of Canada geese were discovered in southern WI and elsewhere in the Flyway during the 1950s and 1960s. Restoration efforts to increase this population began in the 1960s and involved the releasing of birds from captive reared populations, translocation of birds within and among states and provinces and closure of Canada goose hunting in some areas (MF Giant Canada goose management plan 1996). Now giant Canada geese are the most abundant subspecies in the Flyway (Leafloor et al. 2003). The increase in the giant population began in urban and rural areas of southeast WI and this remains an area of high resident goose densities. Giant Canada geese have adapted well to the urban, suburban and agricultural landscapes in Wisconsin resulting in an increasing population and expanding distribution across the state. With this increasing population and distribution come both problems with agricultural damage and urban nuisance geese as well as increased hunting and viewing opportunities. Most recent harvest derivations indicate that giants are approximately 40% of the WI regular season Canada goose harvest and nearly all of the early September season harvest. The Wisconsin breeding population of giants steadily increased during the 1980s and 1990s but stabilized from 2005-2008. Since then it has shown a slowly increasing trend.

The MVP management plan provides the basis for evaluation and management of the MVP population and harvest. The annual harvest quota was being determined using the breeding population estimate (breeding adults) produced by the Ontario Ministry of Natural Resources as a trigger to determine different harvest levels. Based on the total MVP harvest level, the harvest quota in 2006 was distributed among the major and minor harvest states as follows; WI 35%, IL 33%, MI 20%, KY 12% and the minor harvest states a collective harvest of 80,500 geese. Annual harvest derivations for each state indicated the percentage of the annual Canada goose harvest for each state that comes from MVP, resident giants or other populations. The total harvest quota for the state of Wisconsin was determined by applying more recent derivations to the MVP harvest limit. This was the system that guided the Canada goose season framework for Wisconsin up until 2006.

Changing Canada Goose Harvest Management in the Mississippi Flyway

Historically, there has been an emphasis on maintaining a high abundance of MVP geese via population objectives and harvest restraint. The simultaneous growth of giant Canada goose populations has provided more harvest opportunities, but has also expanded management challenges (e.g., human-goose conflict). There is some evidence that the annual regular hunting

season changes intended to reduce harvest on MVP geese in low population years also reduced harvest on resident giants, allowing greater growth of that population. In addition, in the Mississippi Flyway nearly 70% of the total Canada goose harvest now consists of resident giant Canada geese. Therefore, it is believed that the resident giant population can "buffer" the MVP and other interior Canada goose populations from harvest impacts in most locations. In order to test this theory, in 2007 the MVP harvest states in the flyway set stable seasons for five years. By creating a stable hunting season framework and monitoring outcomes, the ability of giants to "buffer" the harvest of migrants was tested. On a flyway-wide level, the effects of this new strategy were predicted to increase overall harvest and harvest rate of giant Canada geese and thus slow or stabilize their population growth. Predicted effects on migrant goose populations included either an insignificant increase in harvest rate or an initial larger increase in harvest rate followed by declining abundance and declining harvest rate.

This 5 year trial of a stable hunting season was agreed to among MVP states in 2007, to determine if we could simplify hunting regulation changes, increase hunting opportunity and increase harvest on giant Canada geese without negatively impacting the MVP population. In Wisconsin, we agreed to a 15 day – 5 bird daily bag limit early September Canada goose season, an 85 day – 2 bird daily bag exterior Canada goose season and a 92 day Horicon season with a 6 bird season limit and a 2 bird daily limit.

Wisconsin's Canada goose harvest system provided excellent tools to monitor harvest as part of the evaluation of this strategy. During the 5-year trial from 2007-2011 Exterior Zone harvest figures ranged from 31,570-43,958 while under the previous variable season structures of 2003-2006, the harvest ranged from 26,902 – 46,699 (Figure 5). It did not appear that the regulations had a significant impact on total harvest. Changes in annual goose production and fall weather are likely driving much of the total harvest variation observed over these years. With harsh, early winters, Wisconsin's goose hunting season may effectively end, but this may actually have a greater impact on MVP birds as they are driven south to Illinois where they continue to be hunted. Based on the heavy hunting pressure in Wisconsin early in the season (Figure 6) and low pressure later in the season, season length has had little impact on total harvest.

At the February 2012, Mississippi Flyway Council technical meeting, waterfowl biologists from across the flyway reviewed population status, harvest data and hunter/harvest surveys with the objective of charting the next step in Canada goose hunting regulations based on the prior 5 year stable regulations. Wisconsin's detailed harvest data as reported in this document was important in the evaluation process. Across the Mississippi Flyway, giant Canada geese were harvested at a rate of 16% while in Wisconsin we harvested at a rate of 21%. At the same time, the Wisconsin and the Mississippi Flyway breeding populations of giant or Temperate Breeding (TBP) Canada geese continue to show an increasing population trend. Nonbreeding (1-2 year olds and failed breeders) often migrate north to Ontario for the summer molt in what is called a molt migration. These geese return to Wisconsin and Michigan in September just prior to or with the MVP birds that nest in northern Ontario. Early opening (prior to September 24) regular seasons help to target harvest of these birds and Wisconsin was recognized by the other states as having an effective season structure to provide additional harvest on these migrating TBP geese.

With regard to TBP geese it was believed that early opening dates (mid-September), additional hunting days and higher bag limits were all options to increase regular season harvest on TBP geese across the states. The use of these options would vary by state depending on the goals for the other Canada nesting populations of Canada geese harvested in that state.

In contrast to the data related to TBP Canada geese which suggested opportunities for liberalizing hunting season parameters, the MVP data supported a cautious approach. Several years of low to moderate production, high adult harvest in 2009 and a flat to slightly declining breeding population trend for the MVP all contribute to a decision to avoid changes that might result in increased harvest. Wisconsin is most dependent upon the MVP (about 60% of regular season harvest) to support our Canada goose hunting opportunities with Illinois and Michigan also somewhat dependent upon the MVP. While breeding ground conditions are the primary force driving population change, significant harvest during low population cycles could drive the MVP lower, slow population recovery and reduce hunting opportunity in Wisconsin. In Wisconsin, most regular season Canada goose hunting pressure and harvest occurs in late September and October. In the exterior zone, 78% of the season harvest occurs in the first half of the season prior to November 1 and 77% of the Horicon harvest occurs during the first period (Appendix Table 8). As a result, harvest management decisions that change season structure in September and October have the greatest potential to change harvest rates on Canada geese in Wisconsin.

With the background of mixed results toward TBP and MVP goals, the MFC agreed to a small step toward greater liberalization of Canada goose hunting regulations. The states that share the MVP could increase their regular season Canada goose hunting season length from 85 to 92 days with a 2 bird bag limit or shorten the season to 78 days with a 3 bird daily bag limit. The northern states with high MVP harvest (Wisconsin, Michigan and Illinois) agreed to increase the hunting season length and maintain a 2 bird daily bag limit while the southern MVP states increased the daily bag limit with a shorter season, recognizing that a greater proportion of their harvest is TBP geese. While this change provided an extra week of harvest opportunity for Wisconsin in 2012 and 2013, it had a relatively small impact on overall harvest. Less than 800 geese or 1-2% of total harvest were harvested during these additional 7 days during 2012 and 2013 (Appendix Table 11).

In 2012-13, we examined potential changes within the Horicon zone that support a similar philosophy of small steps toward liberalization. In Wisconsin, the Horicon zone provides a unique hunting opportunity which will be maintained to control MVP harvest. However, data from Wisconsin's harvest report and other analyses suggest that the zone could be reduced in size to target the primary harvest area. Horicon zone changes were explored at a number of meetings which included local biologists, game wardens and hunters, with most in support of such a change. The most frequently suggested alteration to the zone line involved moving the northern boundary south to Hwy 23 and the western boundary being moved east to Hwy 73 (Figure 1). Active permit holders who hunted the Horicon zone responded favorably on post hunt mail surveys, with 63% in support of shrinking the zone boundaries to Hwy 23 and 73 (Appendix Table 17). Votes from the 2013 Spring Rule Hearings also supported this move, so in

August of 2013, staff proposed and the Natural Resources Board approved to convert 48% of the area of the Horicon Zone to Exterior Zone beginning in 2014 through revised boundaries. Along with this boundary change, harvest recording regulations for the Horicon Zone were simplified and standardized with the Exterior Zone Canada goose harvest. This means that Horicon Zone goose hunters will need to register their goose call in via the 1-800 call system currently used by Exterior Zone hunters.

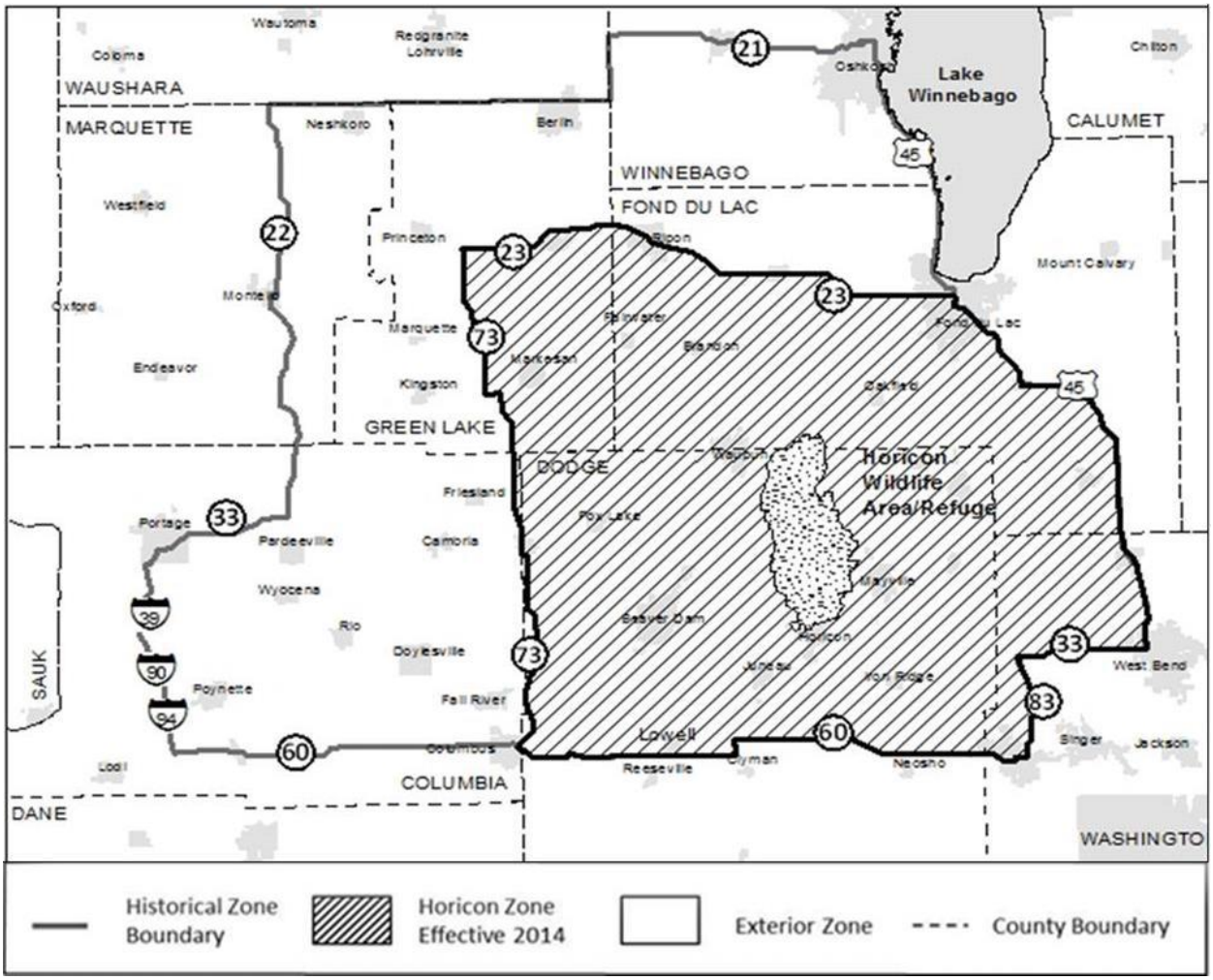

Figure 1. Effective 2014 Horicon Goose Zone Boundary Change

Harvest quantity, distribution and hunter participation are all important pieces of information for the evaluation of these management decisions. This report is a summary of the 2013 management of harvest. Data gathered for this report are based on information from the 1-800 Canada goose harvest registration system and a Horicon zone hunter mail survey. This series of reports has been and continues to be instrumental in making decisions for the management of Canada geese in Wisconsin.

BREEDING POPULATIONS

In 2013, surveys for MVP geese in northern Ontario indicated average production compared to recent years but still remain below the long term average. In 2012, we saw an overall increase in total bird count, in 2013 there were less total birds; however, we saw considerably more breeding individuals and fewer non-breeding individuals in 2013 suggesting that first year and non-breeding individuals in 2012 transitioned to breeders. The adult breeding population was estimated at 319,700, which is a considerable increase from the 2012 estimate of 268,891 and ~10% below the 1989-2012 average of 353,396 breeding birds (Brook and Hughes, June 2013). The minimum MVP breeding population threshold as established by the management plan is 255,000 (Brook and Luukkonen, 2010). In Wisconsin, the 2013 breeding population estimate for resident giant Canada geese did not increase for the second time in the last several years and was down at 138,925 compared to previous estimate of 145,386 (Van Horn et al, 2013).

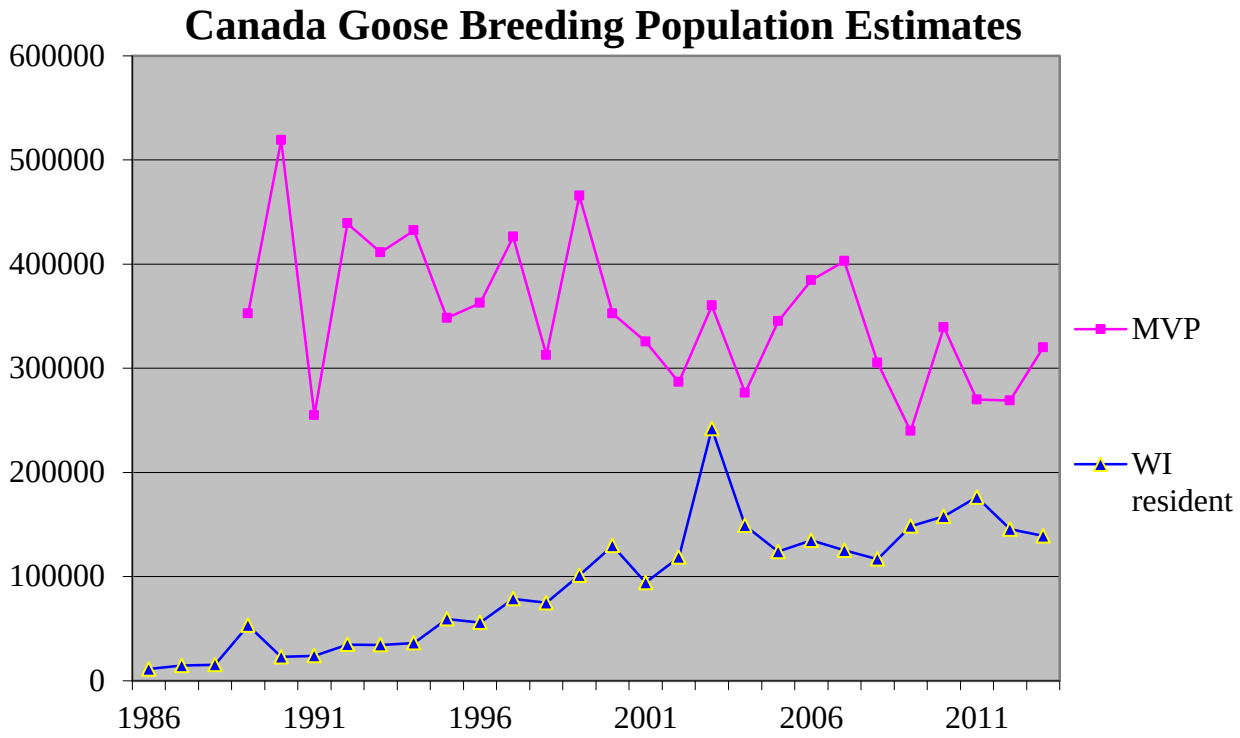

Figure 2.

METHODS

The Wisconsin Department of Natural Resources collects Canada goose harvest data via two different methods in the two Canada goose management zones:

1-800 Reporting System

During the statewide Early September season and the Exterior zone in the regular season, all Canada goose hunters are required to report their harvest using the 1-800-99-GOOSE telephone call-in system within 48 hours. With this system hunters report the following information: DNR customer number, date of harvest, county of harvest and number of geese harvested. This information is electronically recorded and summarized in a harvest database that is reviewed at least weekly during the season to track harvest levels. Department law enforcement personnel around the state conduct field checks of Canada goose hunters to assure compliance with the reporting requirement. Results of these field checks provide a compliance rate that is used to adjust the reported harvest to estimate total Canada goose harvest.

Horicon Mail Survey

Canada goose hunters in the Horicon zone were mailed a hunter questionnaire to obtain harvest information. The questionnaire was sent to 100% of the permit holders and mailed at the end of each time period. The Horicon hunters were selected randomly in proportion to the number in each time period. Response rates for questionnaires (Appendix Table 1) in the Horicon zone historically has been around 50%, however this year the response rate was just under 60%.

RESULTS AND DISCUSSION

Early September Canada Goose Season Hunter Participation and Harvest

The Early September season is an important part of Wisconsin's Canada goose management program. This season offers hunters an additional recreational experience outside of the regular season and directs harvest pressure onto our resident giant Canada geese. In 2013 the season was open from September 1-15 as allowed by federal rule, which was unchanged from previous years.

The number of applicants for the early season Canada goose permit was 55,272 which was the second year in a row that permit numbers increased (Appendix Table 18). Prior to 2003, the number of early permit holders had been steadily increasing. However, in 2004 the Conservation Patron license increased from $110 to $140 and then to $165 in 2005 and the number of patron licenses began declining. We believe this also triggered a several year decline in Canada goose permit holders from 2004-2011 since all conservation patron license holders were provided an early goose permit. We have no data to assess the percent of the total applicants that actively

hunt during this period although the federal HIP data suggests relatively stable overall (early and regular season) active Canada goose hunter numbers in Wisconsin the last several years. Conservation patron license customers are offered an early goose permit as part of the combined license package so some of these permit holders may have had little intent to hunt during this season even though they had a permit. The harvest figures for this year show that 4,228 hunters were successful in harvesting one or more geese during the early season, which is similar to the 4,323 in 2012.

At an estimated 19,407 geese, the 2013 early September Canada goose harvest was down from last year but relatively similar to recent years. All of the counties with the highest early season harvest were similar to 2012 and previous years.

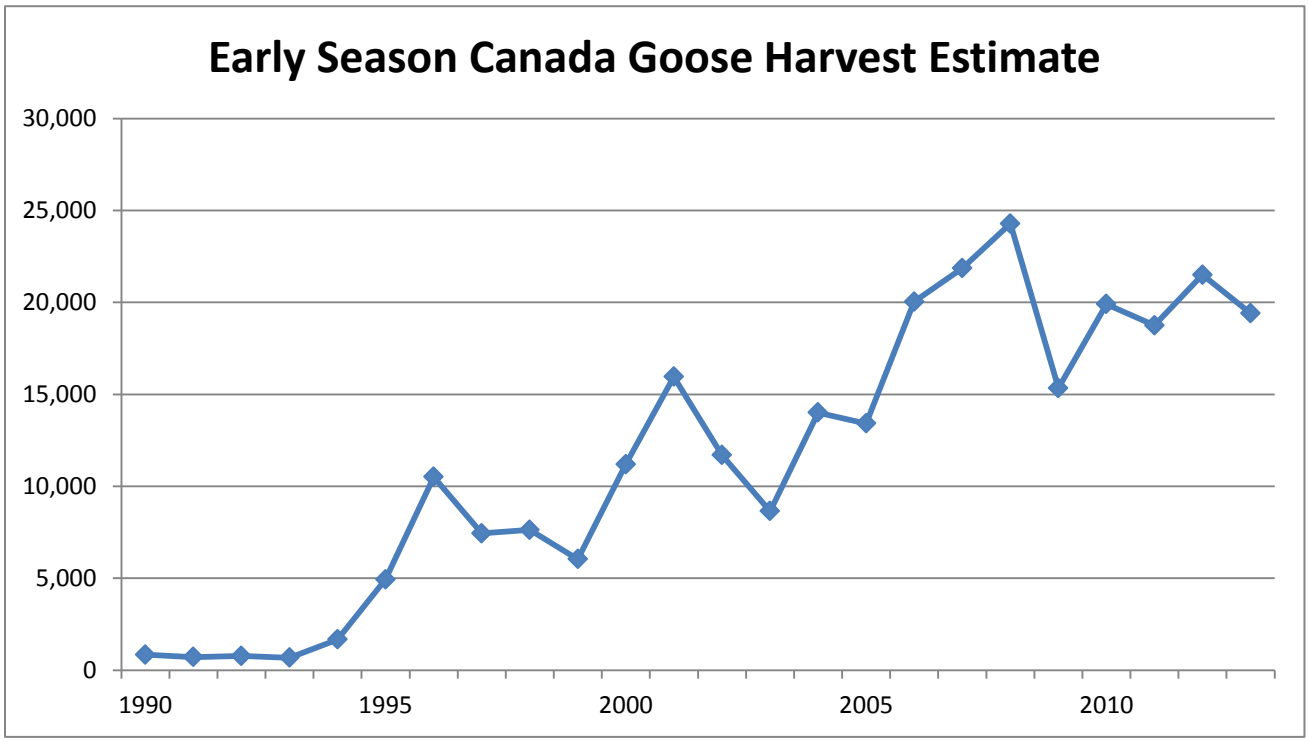

Figure 3.

Table 1.

Top 10 counties - Early Season Harvest - 2012			
County	Rank	Estimated Kill	Percent of Early Total
Manitowoc	1	1070	5.5%
Dodge	2	909	4.7%
Brown	3	863	4.4%
Polk	4	816	4.2%
Door	5	698	3.6%
Marathon	6	646	3.3%
Waukesha	7	644	3.3%
Barron	8	599	3.1%
Kewaunee	9	574	3.0%
Winnebago	10	562	2.9%

Regular Season Hunter Participation and Characteristics

In 2013, 83,417 individuals received a Wisconsin Canada goose regular season hunting permit (Exterior or Horicon). This was an increase of 4,386 or +5.3% from 2012 which is an important shift from a decreasing trend over the last several years. As with the early season permit the cost of the conservation patron license is thought to be the primary cause of the decline. As part of the combined license package, a conservation patron holder is offered an exterior zone Canada goose permit. In order to hunt Canada geese in the Horicon zone a hunter must apply for a permit and the number of Horicon permit holders decreased by 267.

Exterior Zone

Exterior Zone permits totaled 73,313 in 2013 (Figure 4). This represents 88% of the total regular season permits, which is similar to recent years. However, we have no associated state estimate of how many were actively hunting geese. Estimates of the number of active Wisconsin goose hunters derived from US Fish and Wildlife Service Harvest Information Program (HIP) estimates for 2013 will not be available until July, 2014; however, federal estimates suggest the number of active Wisconsin Canada goose hunters the last several has been stable near 40,000-45,000. Previous comparisons of state and federal hunter estimates suggest that about 50% of the exterior zone permit holders are active goose hunters, which would indicate about 36,500 hunters in the exterior zone pursued geese.

The number of exterior goose permits issued, by county of residence, was similar when compared to recent years (Appendix Table 3). In descending order, the counties with the highest

number of permits issued were Waukesha, Dane, Outagamie, Brown and Winnebago. These counties also have some of the highest human populations in the state.

Horicon Zone

The Horicon Zone is a large area that includes all of Green Lake and parts of Dodge, Columbia, Fond du Lac, Marquette, Washington and Winnebago counties. Horicon zone permit holders received 6 tags in 2013. There has been a gradual decline in the number of Horicon permits over the last 19 years. The total number of Horicon permits issued in 2013 was 10,104 (Figure 4). The percentage of total regular season hunters represented by the Horicon permits in 2013 was 12% which is similar to recent years (Appendix Table 2). The percentage of active Horicon zone hunters (those who actually hunted) from all time periods decreased from 57% in 2012 to 51%, primarily in Period 1. The mean number of trips taken by active hunters in Period 1 decreased from 4.7 in 2012 to 4.6 in 2013 and during Period 2, the mean number of trips decreased from 4.5 to 4.2 in 2013 (Appendix Table 7). Harvest success of active hunters in 2013 was on average with recent years with 48% of Period 1 hunters being successful and but only 35% of period 2 hunters being successful compared to an average success rate of the previous 4 years of 48% for Period 1 and 43% for Period 2.

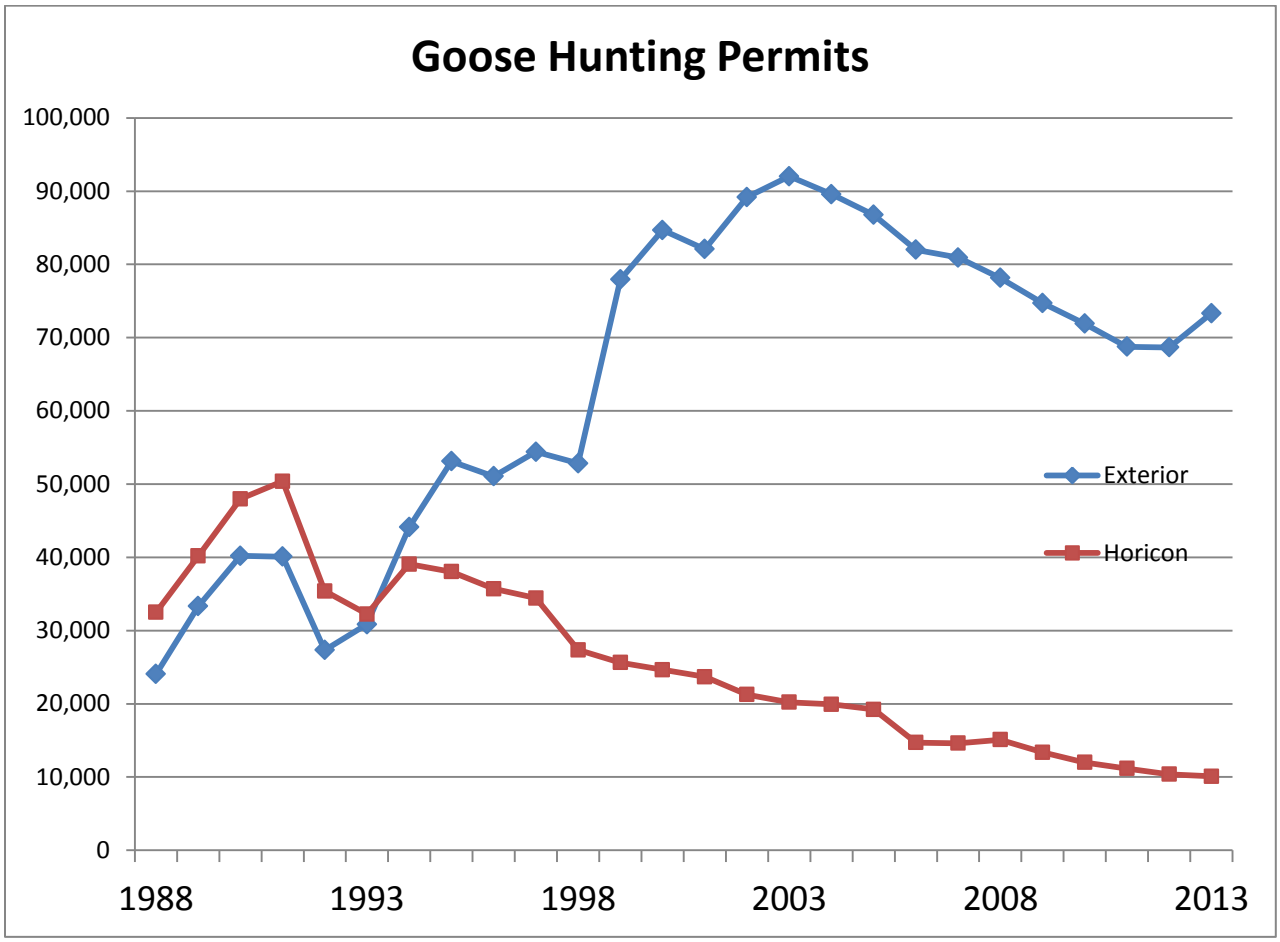

Figure 4.

Horicon zone hunters are primarily hunters that have previous experience in this zone. In 2013, 86% of the Horicon zone hunters had also hunted there in 2012, and 93% had previous experience in the zone, which is consistent with other years (Appendix Tables 4 and 5). The Horicon time periods serve to distribute hunter harvest pressure across the fall season. Since 2008, there have been only 2 periods, roughly splitting the 92 days season in half, with no overlap. There is typically a strong preference for time Period 1 (6,879 applicants) compared with only 3,225 applicants for Period 2 (Appendix Table 2). About 40% of the Horicon zone hunters reported spending the majority of their time on private lands which is similar to previous years (Appendix Table 16). After several years of 66-68% of the Horicon zone goose hunters also engaging in duck hunting, this proportion increased to 70% in 2009, 72% in 2010, and 73% in 2011 and 2012, however this again decreased to 64% in 2013.

Regular Season Harvest

Statewide

The statewide regular season Canada goose harvest in 2013 was 44,783 (Appendix Table 8). Statewide harvest figures suggest that our season structure continues to effectively manage harvest despite annual changes in production. The 2013 statewide regular season harvest was 13% higher than 2012. This likely reflects a good production year on the Ontario Canada goose breeding grounds and the presence of more young of the year birds in the fall flight.

Table 2.

Top 10 counties - Statewide Harvest for 2012
(all zones-regular season)

County	Rank	Estimated Kill	% of Statewide Total
Dodge	1	4,347	9.7%
Brown	2	2,918	6.5%
Manitowoc	3	1,983	4.4%
Dane	4	1,766	3.9%
Fond Du Lac	5	1,732	3.9%
Outagamie	6	1,664	3.7%
Waukesha	7	1,558	3.5%
Racine	8	1,529	3.4%
Kewaunee	9	1,397	3.1%
Marathon	10	1,372	3.1%

The county level harvest distribution illustrates the continued concentration of geese and goose harvest in areas associated with the Horicon zone (Dodge and Fond du Lac counties) which have high MVP harvest (Table 2). The counties with the highest harvest have all been in the top 10 in recent years and the top several have remained largely unchanged.

Exterior Zone

The Exterior zone represents all areas of the state outside of the Horicon zone. The opening of the exterior zone begins the day after the September 15 close of the early goose season. Generally the objective for higher harvest on giant Canada geese in relation to MVP Canada geese would support an early opening date for the exterior season when most MVP geese have not yet arrived in Wisconsin and hunter participation and harvest are highest.

The total exterior zone harvest in 2013 was 37,984 Canada geese which represents 85% of the statewide regular season harvest (Appendix Table 8). This proportion of the statewide total was up slightly from recent years (84% in 2012, 79% in 2011). The harvest was greater than in 2012

and the 5th highest since 1990. The list of the top 10 harvest counties was similar to recent years, and represents the southern and eastern portions of the state, excluding those areas in the Horicon zone. These counties also overlap with several of the counties that have the highest human populations, suggesting we are taking advantage of harvest potential in areas where high goose numbers have greater potential to create nuisance problems.

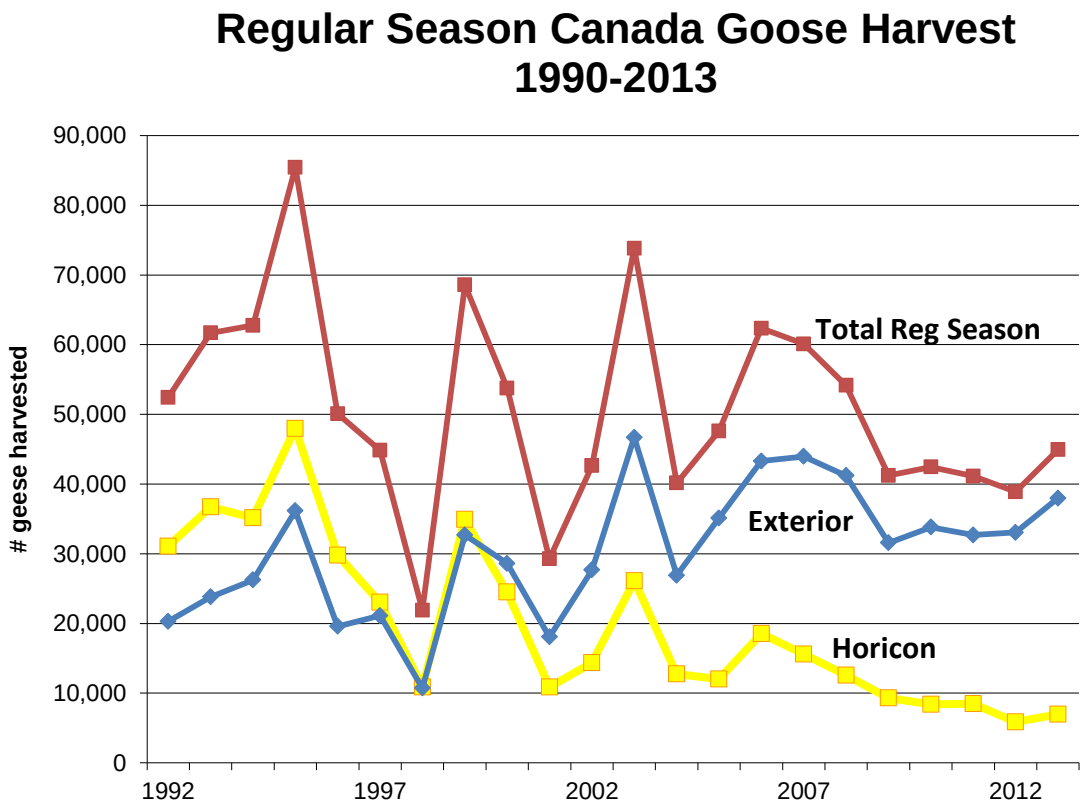

Figure 5.
Note: This figure is based on state estimates

Table 3.

Top 10 counties - Exterior Harvest - 2013

County	Rank	Estimated Kill	% of Exterior Total
Brown	1	2,918	7.70%
Manitowoc	2	1,983	5.20%
Dane	3	1,766	4.60%
Outagamie	4	1,664	4.40%
Waukesha	5	1,558	4.10%
Racine	6	1,529	4.00%
Kewaunee	7	1,397	3.70%
Marathon	8	1,372	3.60%
Walworth	9	1,091	2.90%
Sheboygan	10	1,066	2.80%

Harvest of Canada geese continues to be highest on weekends and most of the exterior zone harvest occurs in late September and October (Figure 6 & Appendix Table 11). With the regular opener on a weekday we saw a decrease in opening day harvest from 2012. Daily and weekly harvest levels drop off considerably during November and December. In 2013, early winter weather was uncharacteristically harsh with significant snowfall events occurring in late-Nov. Late season hunting opportunities were limited up to the season close although there are relatively few active goose hunters in December. Throughout the season, reports from hunters indicated that geese were often utilizing areas where they were not accessible to hunters (within municipal areas closed to hunting). Canada goose harvest is particularly low during the traditional 9 day gun deer hunting season at the end of November and 2013 was no exception. In 2013, 8,682 individuals (10.5%) harvested at least one goose out of 82,318 exterior zone permit holders (Appendix Table 15). This proportion has remained relatively unchanged for several years. While these figures may seem low we have no measure of how many of these permit holders actively hunted geese because conservation patron license holders can automatically obtain this permit. Of successful hunters, 30% harvested a single goose and 31% harvested 2 geese. These percentages are similar to 2006, 2007, 2009 and 2010 but differ from 2008 when 52% of hunters harvested just 1 goose, and only 21% harvested 2 geese.

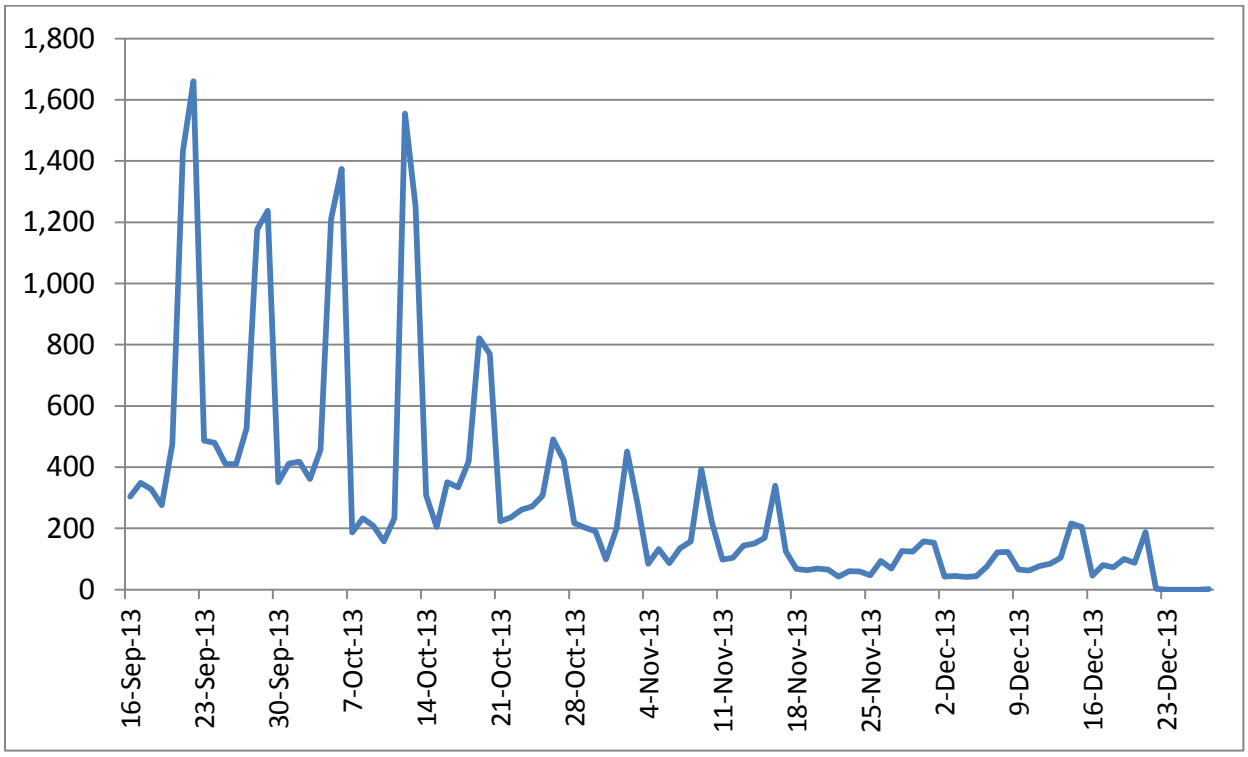

Figure 6.

Horicon Zone

The total Canada goose harvest for the Horicon Zone in 2013 was 6,799 which made up 15% of the statewide regular season harvest (Appendix Table 8). This total was up from 2012 (5,841) but down from other recent years, which corresponds with the management objective of minimizing harvest pressure on MVP geese. The overall number of Horicon zone permit holders was down from 2012. Success rates were greater than in 2012 and participation rates remained stable (Appendix Tables 2, 13, and 14). Only 22.9% of active Horicon zone hunters in Period 1 harvested more than 2 geese (12.9% in Period 2) and just 7.1% of Period 1 hunters (4.7% in Period 2) filled all 6 of their harvest tags (Appendix Table 13) so it does not appear that a limit of 6 harvest tags is reducing harvest opportunity.

The areas directly adjacent to the Horicon Marsh National Wildlife Refuge and state Wildlife Management area (portions of Dodge and Fond du Lac Counties) continue to represent a high percentage of the Horicon zone harvest, with 80% occurring in these two counties alone. If Green Lake County harvest is included, then these 3 counties account for 87% of the total Horicon zone harvest. The other areas of the Horicon zone such as Winnebago and Columbia counties represent a significant portion of the zone's area but contribute relatively little to the harvest. For this reason we removed the area north of Hwy. 23 and west of Hwy 73 from the Horicon zone and designated it as part of the Exterior zone effective in 2014.

MANAGEMENT IMPLICATIONS

Two primary populations of Canada geese are found in Wisconsin during the fall and winter; the Temperate Breeding Population of giant Canada geese which nest in Wisconsin and adjacent states and the northern Ontario nesting geese of the Mississippi Valley Population (MVP). The management of the MVP is guided by a cooperative management plan among several states and Ontario and is acknowledged by the US Fish and Wildlife Service for management of this population (Brook and Luukkonen 2010). Similarly, the management of the giant Canada goose population in the Mississippi Flyway is also guided by a cooperative management plan (Zenner et al. 1996). Wisconsin's Canada goose management is guided by these 2 plans as well as the Wisconsin Waterfowl Strategic Plan 2008-2018 (Van Horn and Benton 2007). The goal of Canada goose management in Wisconsin is to manage the two populations in a way that balances the different and sometimes conflicting societal perspectives of Canada geese. This goal is reached through the following:

- Provide for both abundant and quality Canada goose hunting opportunities and monitor statewide and local harvest levels. Part of quality hunting opportunities is to simplify hunting regulations at the state and flyway level where possible.
- Work with flyway partners in cooperative monitoring of MVP and resident giant Canada goose populations, survival and harvest with the objective of maintaining a higher rate of harvest on giant Canada geese than MVP Canada geese.
- Address conflicts between abundant Canada goose populations and people through integrated management techniques including hunting where appropriate
- Seek to manage the statewide Wisconsin breeding population of Canada geese near 125,000.

The monitoring of harvest as described in this report is an important part of implementing these strategies along with annual population surveys, banding efforts and public input.

Mississippi Valley Population:

While giant Canada geese provide about 40% of Wisconsin's regular Canada goose harvest and nearly all of the early season harvest, we are still dependent upon MVP Canada geese for about 60% of our annual regular season goose harvest. This is in contrast to most other Mississippi Flyway states where over 70% of their Canada goose harvest consists of resident giant Canada geese. For example, Minnesota harvests over 90% resident geese and has a much larger population of these birds, which is why regulations may vary even among neighboring states. The MVP breeding population has been generally stable to slightly declining over the last 20 years. The rate of adult MVP harvest (not including crippling loss) was within or below the targeted range of 8-10% from 2003-2013. However, in years with a late winter and poor nesting conditions, the harvest rate on adult birds increased above this range because fewer young of the year were in the fall flight.

To be consistent with the MVP management plan and in the long-term interest of maintaining the MVP population as a sustainable resource, Wisconsin harvest management decisions need to continue to take steps to maintain a relatively low harvest rate on MVP geese. The earlier opening of the exterior zone Canada goose season provides for the high harvest in the early part of the season but with a lower proportion of MVP geese. In addition, maintenance of a 2 bird daily bag limit when MVP are present in Wisconsin controls the rate of harvest on this population. Daily harvest records allow us to document this high early harvest and schedule season dates which reduce pressure on the MVP while maintaining an abundant harvest opportunity. The mid-September opening of the exterior zone season has allowed Wisconsin to increase harvest but shift it away from the mid-October peak of MVP presence in the state. Based on the variability of breeding ground conditions and the relatively low and stable harvest rates, it appears that the MVP population change is driven primarily by breeding conditions and not by harvest; however, because of periods of low recruitment there is still a need to remain cautious about MVP harvest management.

The area around the Horicon Marsh contained within the Horicon zone remains a focal area of MVP migration through Wisconsin, so a shift in harvest pressure from this area to other parts of the state is helpful in reducing the harvest rate on this population. Over the last several years, these harvest reports have shown a decline in Horicon zone hunter permits and harvest while maintaining a quality hunting experience. Further, these reports have shown that few hunters (~5%) fill the maximum 6 harvest tags during the entire season demonstrating that this regulation is not the limiting factor affecting harvest opportunity (Appendix Table 13). Despite the restrictions, about 13.5% of the statewide regular season Canada goose harvest in 2013 came from the 2 counties (out of 72) containing the Horicon Marsh (Dodge and Fond du Lac) so the potential for a high Canada goose harvest in this area remains (Appendix Table 10). This proportion was lower in 2013 than the nearly 20% level observed in recent years.

Because a disproportionate number of Horicon harvested geese are MVP, there is a continued need for special harvest management in this zone. However, the county level harvest data also indicate that parts of the Horicon zone are being underutilized, so shrinking the zone to better represent the core around Horicon Marsh is a management change that we began to evaluate in 2012. An analysis of MVP band return data confirmed that MVP harvest is much higher in and around the marsh. The area of the state with the highest band recoveries for MVP Canada geese is the eastern portion of the Horicon zone (Dodge, Fond du Lac, Washington Counties) which is closest to the Horicon marsh. These analyses were presented to advisory committees and in public meetings during 2012-13 to collect input on a potential change to the Horicon Zone boundary. Based on public input and harvest analysis a zone boundary change was approved for the 2014 season which reduces the size of the Horicon Zone to 52% of the former size. This reduced area is the most concentrated area of harvest representing 82% of zone total so it is believed that harvest controls will still be effective to protect against over harvest of the MVP.

Temperate Nesting Goose Population

During the last 20+ years, the Wisconsin nesting population of temperate nesting (also known as TNP, resident or giant) Canada geese has grown and provided an additional hunting resource that is more widely distributed around the state than the MVP. However, this has also generated considerable conflict between abundant geese present year round and human outdoor activities. Many of the same management strategies designed to reduce harvest on MVP are also intended to provide hunters with an opportunity to harvest the abundant giant Canada goose resource and help address human-goose conflicts. We have liberalized and simplified Canada goose harvest regulations over the last several years, eliminated subzone restrictions and now have the maximum number days (107) of Canada goose hunting allowed by international treaty. The last five year average harvest rate on giant Canada geese in Wisconsin was over 21%, indicating that our current season structure has been helping us reach our goal of increased harvest pressure on locally nesting giant Canada geese. The 15 days of September hunting in the early season now accounts for roughly 1/3 of the total statewide fall goose harvest. The county level data shown in this report indicate that our early and exterior zone Canada goose hunting are highest in many of the same counties where our human population is highest and where many Canada goose control operations are requested.

Agricultural crop damage from Canada geese, particularly during the spring continues to be a concern for farmers in Wisconsin in areas where Canada geese concentrate. Consideration of agricultural damage issues remains important in our overall approach to managing Wisconsin's Canada goose populations. The department can issue a spring agricultural damage permit for those with eligible claims, which authorizes the removal of Canada geese by shooting from May 15-August 31. Applicants must have (or expect to have) crop damage in excess of $1000 and be enrolled in the wildlife damage abatement and claims program. In 2013, 76 spring Canada goose shooting permits were issued and 307 geese were killed.

Similarly, consideration of Canada goose problems in urban areas is another important aspect of management of goose management in Wisconsin. Initially, many of the Wisconsin breeding Canada geese were found in more suburban and urban counties, however, resident breeders continue to increase in distribution across the state. As we monitor breeding populations and harvest we can evaluate our effectiveness at using recreational harvest to assist in managing problems that result from concentrations of Canada geese in urban areas. To target these birds in the fall, the early Canada goose season remains an important part of our management strategy and contributes a significant proportion of the overall harvest. In addition, site specific Canada goose control measures (nest and egg control, adult take) will continue to be implemented in some areas to mitigate nuisance goose problems. The nuisance goose control efforts of US Department of Agriculture - Wildlife Services staff resulted in the removal of 1,469 adult and juvenile Canada geese at 26 sites in 2013; the vast majority of which were in the Milwaukee metro area where hunting does not sufficiently address these urban goose conflicts (Lovell, 2013). Beginning in 2010, in addition to the federal requirement, Wisconsin added its own mandatory reporting for nest and egg depredation permits to better monitor control efforts

around the state. In 2013, 136 nest and egg depredation permits were issued with 616 nests removed.

CITATIONS

Brook, R. and J. Hughes. June 2013. 2013 Preliminary Spring Survey Results for MVP Canada Geese. Ontario Ministry of Natural Resources and Canadian Wildlife Service.

Brook, R.W. and D.R. Luukkonen. 2010. A Management Plan for the Mississippi Valley Population of Canada geese. Mississippi Flyway Council Technical Section. 43pp.

Leafloor, J.O., K. F. Abraham, F. D. Caswell, K. E. Gamble, R. N. Helm, D. D. Humburg, J. S. Lawerence, D. R. Luukkonen, R. D. Pritchert, E. L. Warr, G. G. Zenner. 2003. Canada goose management in the Mississippi Flyway. Pages 22-36 in T. J. Moser, R. D. Lien, K. C. VerCauteren, K. F. Abraham, D. E. Andersen, J. G. Bruggink, J. M. Coluccy, D. A. Graber, J. O. Leafloor, D. R. Luukkonen, R. E. Trost, editors. Proceedings of the 2003 International Canada Goose Symposium, Madison, WI. USA.

Lovell, C. Canada Goose Summary Report for Wisconsin Department of Natural Resources 2013. 2013.USDA Wildlife Services. 9pp.

Miller, S.W. 1998. The biopolitics of Mississippi Valley Population Canada geese management: the Wisconsin perspective. Pages 467-474 in D.H. Rusch, M. D. Samuel, D.D. Humburg, and B.D. Sullivan, editors. Biology and management of Canada geese. Proceedings of the international Canada Goose Symposium, Milwaukee, Wisconsin, USA.

Van Horn, K., J. Christopoulos, and R. Gatti. 2013. Waterfowl Breeding Population Survey for Wisconsin, 1973-2012. Wisconsin Department of Natural Resources. 31pp.

Van Horn, K. and K. Benton. 2007. Wisconsin Waterfowl Strategic Plan 2008-2018. Wisconsin Department of Natural Resources publication. Madison, WI. 56pp.

Wisconsin Department of Natural Resources. 1980. Canada Goose Management Plan for East Central Wisconsin 1980-1990.

Zenner, G., J. Levengood, B. Williamson, R. Marshalla, R. Bielefeld, M. Hartman, M. Morton, M. Gillespie, J. Johnson, T. Landwehr, D. Graber, G. Tori, K. Abraham, E. Warr, B. Wheeler, B. Montgomery, and D. Rusch. 1996. Mississippi Flyway Giant Canada Goose Management Plan. Mississippi Flyway Council Technical Section. 65pp.

Appendix - Harvest and Participation Data

Table 1. *Number of surveys mailed, returned, and response rate for the 2013 Canada goose season.*

Zone and Period	# Mailed	# Returned	Percent Response
Horicon 1	6,879	3,968	57.7%
Horicon 2	3,225	2,037	63.2%
Total	**10,104**	**6,005**	**59.4%**

Table 2. *Permits issued, active hunters, percent active, and number of successful hunters by zone and time period. Active and successful hunters derived from questionnaire data. Percent successful applies to active permit holders, except for Exterior Zone where it applies to all permit holders.*

Zone and Period	Permits Issued (hunters)	Active Hunters	% Active	# Successful	% Successful
Horicon 1	6,879	3,838	55.8%	1,846	48.1%
Horicon 2	3,225	1,509	46.8%	542	35.9%
Exterior	73,313			8,682	11.8%
Total	**83,417**			**11,070**	**13.3%**

Table 3. *Number of goose permit applicants by zone and county of residence. (Continued on next page).*

	Horicon		Exterior	
County	Frequency	Percent	Frequency	Percent
Adams	7	0.1	165	0.2
Ashland	4	0	314	0.4
Barron	23	0.2	1,070	1.5
Bayfield	5	0	210	0.3
Brown	59	0.6	2,735	3.7
Buffalo	13	0.1	414	0.6
Burnett	11	0.1	437	0.6
Calumet	20	0.2	595	0.8
Chippewa	23	0.2	834	1.1
Clark	7	0.1	368	0.5
Columbia	593	5.9	1,203	1.6
Crawford	22	0.2	322	0.4
Dane	468	4.6	4,236	5.8
Dodge	1,231	12.2	420	0.6
Door	9	0.1	677	0.9
Douglas	11	0.1	562	0.8
Dunn	11	0.1	581	0.8
Eau Claire	60	0.6	1,069	1.5
Florence	1	0	45	0.1
Fond Du Lac	1,073	10.6	851	1.2
Forest	1	0	157	0.2
Grant	95	0.9	505	0.7
Green	21	0.2	580	0.8
Green Lake	441	4.4	221	0.3
Iowa	28	0.3	340	0.5
Iron	5	0	150	0.2
Jackson	8	0.1	193	0.3
Jefferson	121	1.2	1,889	2.6
Juneau	19	0.2	551	0.8
Kenosha	57	0.6	1,132	1.5
Kewaunee	5	0	609	0.8
La Crosse	145	1.4	1,725	2.4
Lafayette	20	0.2	177	0.2
Langlade	12	0.1	281	0.4
Lincoln	40	0.4	618	0.8
Manitowoc	32	0.3	1,685	2.3
Marathon	73	0.7	1,517	2.1

	Horicon		Exterior	
County	Frequency	Percent	Frequency	Percent
Marinette	13	0.1	813	1.1
Marquette	87	0.9	501	0.7
Menominee			5	0
Milwaukee	736	7.3	2,426	3.3
Monroe	30	0.3	491	0.7
Oconto	12	0.1	740	1
Oneida	60	0.6	827	1.1
Outagamie	148	1.5	3,148	4.3
Ozaukee	146	1.4	1,155	1.6
Pepin	1	0	161	0.2
Pierce	20	0.2	602	0.8
Polk	15	0.1	1,146	1.6
Portage	55	0.5	1,065	1.5
Price	8	0.1	341	0.5
Racine	117	1.2	2,206	3
Richland	20	0.2	143	0.2
Rock	131	1.3	1,853	2.5
Rusk	7	0.1	257	0.4
St. Croix	31	0.3	1,341	1.8
Sauk	73	0.7	1,038	1.4
Sawyer	4	0	406	0.6
Shawano	26	0.3	675	0.9
Sheboygan	95	0.9	1,904	2.6
Taylor	8	0.1	341	0.5
Trempealeau	14	0.1	594	0.8
Vernon	69	0.7	416	0.6
Vilas	34	0.3	440	0.6
Walworth	69	0.7	1,315	1.8
Washburn	3	0	522	0.7
Washington	543	5.4	1,708	2.3
Waukesha	814	8.1	4,313	5.9
Waupaca	47	0.5	1,161	1.6
Waushara	25	0.2	434	0.6
Winnebago	498	4.9	2,607	3.6
Wood	72	0.7	1,491	2
Unknown	488	4.8	2,392	3.3
Non. Resident	811	8	2,897	4
Total	**10,104**		**73,313**	

Table 4. *Goose hunting in past zones.*

Current Zone	Past Horicon	Past Exterior
Horicon	93.2%	6.8%

Table 5. *Percent hunting geese in 2013 that also hunted in 2012.*

Zone	% That Hunted in 2012
Horicon	85.8%

Table 6. *Past and present duck hunting by goose permit.*

Zone	Duck Hunted in 2012	Duck Hunted in 2013
Horicon	61.6%	63.8%

Table 7. *Mean number of hunting trips by zone and time period. Applies to active permit holders only.*

Zone/Period	Mean # of Trips	Maximum # of Trips
Horicon 1	4.6	45
Horicon 2	4.2	40

Table 8. *Harvest by zone and time period. The estimated harvest was derived from questionnaire data in the Horicon zone. Reported harvest in the Exterior Zone is from mandatory reporting. The reported harvest for the Exterior zone was adjusted by an overall compliance rate of 80.2% to obtain the estimated harvest.*

Zone/Period	Estimated Harvest	Reported Harvest
Horicon 1	5,335	
Horicon 2	1,464	
Exterior	37,984	30,436
Total	**44,783**	

Table 9. *Exterior zone goose harvest by county (continued on next page).*

County	Reported Kill	Expanded Kill	Percent
Adams	295	368	1.0%
Ashland	119	149	0.4%
Barron	751	937	2.5%
Bayfield	134	167	0.4%
Brown	2,338	2,918	7.7%
Buffalo	240	300	0.8%
Burnett	255	318	0.8%
Calumet	760	948	2.5%
Chippewa	508	634	1.7%
Clark	240	300	0.8%
Columbia	290	362	1.0%
Crawford	176	220	0.6%
Dane	1,415	1,766	4.6%
Dodge	206	257	0.7%
Door	838	1,046	2.8%
Douglas	101	126	0.3%
Dunn	112	140	0.4%
Eau Claire	125	156	0.4%
Florance	24	30	0.1%
Fond Du Lac	306	382	1.0%
Forest	71	89	0.2%
Grant	86	107	0.3%
Green	135	168	0.4%
Green Lake	1	1	0.0%
Iowa	94	117	0.3%
Iron	49	61	0.2%
Jackson	32	40	0.1%
Jefferson	562	701	1.8%
Juneau	164	205	0.5%
Kenosha	694	866	2.3%

County	Reported Kill	Expanded Kill	Percent
Kewaunee	1,119	1,397	3.7%
La Crosse	170	212	0.6%
Lafayette	61	76	0.2%
Langlade	239	298	0.8%
Lincoln	178	222	0.6%
Manitowoc	1,589	1,983	5.2%
Marathon	1,099	1,372	3.6%
Marinette	410	512	1.3%
Marquette	255	318	0.8%
Menominee	2	2	0.0%
Milwaukee	17	21	0.1%
Monroe	137	171	0.5%
Oconto	813	1,015	2.7%
Oneida	114	142	0.4%
Outagamie	1,333	1,664	4.4%
Ozaukee	550	686	1.8%
Pepin	47	59	0.2%
Pierce	130	162	0.4%
Polk	799	997	2.6%
Portage	388	484	1.3%
Price	104	130	0.3%
Racine	1,225	1,529	4.0%
Richland	55	69	0.2%
Rock	597	745	2.0%
Rusk	204	255	0.7%
Sauk	128	160	0.4%
Sawyer	177	221	0.6%
Shawano	354	442	1.2%
Sheboygan	854	1,066	2.8%
St. Croix	436	544	1.4%
Taylor	255	318	0.8%
Trempealeau	71	89	0.2%
Vernon	126	157	0.4%
Vilas	42	52	0.1%
Walworth	874	1,091	2.9%
Washburn	264	329	0.9%
Washington	709	885	2.3%
Waukesha	1,248	1,558	4.1%
Waupaca	603	753	2.0%
Waushara	247	308	0.8%
Winnebago	741	925	2.4%
Wood	551	688	1.8%
Total	30,436	37,984	

Table 10. *Horicon Zone goose harvest by county. The estimated harvest was derived from questionnaire data.*

County	Total Estimated Harvest	% of Harvest
Columbia	253	3.7%
Dodge	4,090	60.2%
Fond du lac	1,350	19.9%
Green Lake	470	6.9%
Marquette	174	2.6%
Washington	259	3.8%
Winnebago	203	3.0%
Total	**6,799**	

Table 11. *Exterior zone goose harvest by date. Bold numbers indicate weekends (continued on the next page).*

Date	Reported Kill	Expanded Kill	Cumulative Kill	Percent	Cumulative Percent
9/16/13	304	379	379	1.0%	1.0%
9/17/13	349	436	815	1.1%	2.1%
9/18/13	328	409	1,224	1.1%	3.2%
9/19/13	276	344	1,569	0.9%	4.1%
9/20/13	476	594	2,163	1.6%	5.7%
9/21/13	**1,433**	**1,788**	**3,951**	**4.7%**	**10.4%**
9/22/13	**1,661**	**2,073**	**6,024**	**5.5%**	**15.9%**
9/23/13	487	608	6,632	1.6%	17.5%
9/24/13	479	598	7,230	1.6%	19.0%
9/25/13	410	512	7,741	1.3%	20.4%
9/26/13	409	510	8,252	1.3%	21.7%
9/27/13	526	656	8,908	1.7%	23.5%
9/28/13	**1,177**	**1,469**	**10,377**	**3.9%**	**27.3%**
9/29/13	**1,237**	**1,544**	**11,921**	**4.1%**	**31.4%**
9/30/13	351	438	12,359	1.2%	32.5%
10/1/13	412	514	12,873	1.4%	33.9%
10/2/13	418	522	13,395	1.4%	35.3%
10/3/13	361	451	13,845	1.2%	36.5%
10/4/13	456	569	14,414	1.5%	37.9%
10/5/13	**1,210**	**1,510**	**15,924**	**4.0%**	**41.9%**
10/6/13	**1,374**	**1,715**	**17,639**	**4.5%**	**46.4%**
10/7/13	187	233	17,873	0.6%	47.1%
10/8/13	233	291	18,163	0.8%	47.8%
10/9/13	209	261	18,424	0.7%	48.5%
10/10/13	157	196	18,620	0.5%	49.0%
10/11/13	234	292	18,912	0.8%	49.8%
10/12/13	**1,555**	**1,941**	**20,853**	**5.1%**	**54.9%**
10/13/13	**1,252**	**1,562**	**22,415**	**4.1%**	**59.0%**

Date	Reported Kill	Expanded Kill	Cumulative Kill	Percent	Cumulative Percent
10/14/13	308	384	22,800	1.0%	60.0%
10/15/13	205	256	23,056	0.7%	60.7%
10/16/13	351	438	23,494	1.2%	61.9%
10/17/13	334	417	23,910	1.1%	62.9%
10/18/13	419	523	24,433	1.4%	64.3%
10/19/13	**821**	**1,025**	**25,458**	**2.7%**	**67.0%**
10/20/13	**770**	**961**	**26,419**	**2.5%**	**69.6%**
10/21/13	223	278	26,697	0.7%	70.3%
10/22/13	236	295	26,992	0.8%	71.1%
10/23/13	261	326	27,317	0.9%	71.9%
10/24/13	271	338	27,656	0.9%	72.8%
10/25/13	307	383	28,039	1.0%	73.8%
10/26/13	**491**	**613**	**28,652**	**1.6%**	**75.4%**
10/27/13	**423**	**528**	**29,179**	**1.4%**	**76.8%**
10/28/13	217	271	29,450	0.7%	77.5%
10/29/13	202	252	29,702	0.7%	78.2%
10/30/13	191	238	29,941	0.6%	78.8%
10/31/13	99	124	30,064	0.3%	79.1%
11/1/13	199	248	30,313	0.7%	79.8%
11/2/13	**451**	**563**	**30,876**	**1.5%**	**81.3%**
11/3/13	**279**	**348**	**31,224**	**0.9%**	**82.2%**
11/4/13	84	105	31,329	0.3%	82.5%
11/5/13	132	165	31,493	0.4%	82.9%
11/6/13	86	107	31,601	0.3%	83.2%
11/7/13	134	167	31,768	0.4%	83.6%
11/8/13	157	196	31,964	0.5%	84.2%
11/9/13	**393**	**490**	**32,454**	**1.3%**	**85.4%**
11/10/13	**220**	**275**	**32,729**	**0.7%**	**86.2%**
11/11/13	98	122	32,851	0.3%	86.5%
11/12/13	104	130	32,981	0.3%	86.8%
11/13/13	144	180	33,161	0.5%	87.3%
11/14/13	150	187	33,348	0.5%	87.8%
11/15/13	169	211	33,559	0.6%	88.3%
11/16/13	**339**	**423**	**33,982**	**1.1%**	**89.5%**
11/17/13	**125**	**156**	**34,138**	**0.4%**	**89.9%**
11/18/13	68	85	34,223	0.2%	90.1%
11/19/13	63	79	34,301	0.2%	90.3%
11/20/13	69	86	34,387	0.2%	90.5%
11/21/13	66	82	34,470	0.2%	90.7%
11/22/13	43	54	34,523	0.1%	90.9%
11/23/13	**60**	**75**	**34,598**	**0.2%**	**91.1%**
11/24/13	**59**	**74**	**34,672**	**0.2%**	**91.3%**
11/25/13	47	59	34,731	0.2%	91.4%
11/26/13	94	117	34,848	0.3%	91.7%
11/27/13	69	86	34,934	0.2%	92.0%
11/28/13	126	157	35,091	0.4%	92.4%
11/29/13	124	155	35,246	0.4%	92.8%
11/30/13	**157**	**196**	**35,442**	**0.5%**	**93.3%**
12/1/13	**153**	**191**	**35,633**	**0.5%**	**93.8%**
12/2/13	42	52	35,685	0.1%	93.9%

Date	Reported Kill	Expanded Kill	Cumulative Kill	Percent	Cumulative Percent
12/3/13	45	56	35,741	0.1%	94.1%
12/4/13	41	51	35,793	0.1%	94.2%
12/5/13	44	55	35,848	0.1%	94.4%
12/6/13	75	94	35,941	0.2%	94.6%
12/7/13	**122**	**152**	**36,093**	**0.4%**	**95.0%**
12/8/13	**123**	**154**	**36,247**	**0.4%**	**95.4%**
12/9/13	65	81	36,328	0.2%	95.6%
12/10/13	62	77	36,405	0.2%	95.8%
12/11/13	77	96	36,502	0.3%	96.1%
12/12/13	84	105	36,606	0.3%	96.4%
12/13/13	104	130	36,736	0.3%	96.7%
12/14/13	**216**	**270**	**37,006**	**0.7%**	**97.4%**
12/15/13	**204**	**255**	**37,260**	**0.7%**	**98.1%**
12/16/13	46	57	37,318	0.2%	98.2%
12/17/13	80	100	37,418	0.3%	98.5%
12/18/13	73	91	37,509	0.2%	98.7%
12/19/13	100	125	37,633	0.3%	99.1%
12/20/13	87	109	37,742	0.3%	99.4%
12/21/13	**188**	**235**	**37,977**	**0.6%**	**100.0%**
12/22/13	**3**	**4**	**37,980**	**0.0%**	**100.0%**
12/27/13	2	2	37,983	0.0%	100.0%
1/1/14	1	1	37,984	0.0%	100.0%

Table 12. *Weekday of reported kill in percent. Data from mandatory reporting in the Exterior zone and questionnaires in the other zones.*

Zone/ Period	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Horicon 1	23.6%	7.9%	9.8%	6.7%	9.3%	13.5%	29.2%
Horicon 2	22.1%	12.9%	9.0%	6.2%	9.1%	17.5%	23.3%
Horicon Total	**23.2%**	**9.0%**	**9.6%**	**6.6%**	**9.3%**	**14.4%**	**27.9%**
Exterior	25.9%	8.3%	8.9%	9.0%	8.6%	11.1%	28.3%
All Zones	**25.6%**	**8.4%**	**8.9%**	**8.7%**	**8.7%**	**11.4%**	**28.5%**

Table 13. *Percent success by active permit for the Horicon zone. Harvest figures were derived from questionnaire data.*

Zone/Period	1st Permit	2nd Permit	3rd Permit	4th Permit	5th Permit	6th Permit
Horicon 1	47.2%	33.6%	22.9%	16.1%	9.9%	7.1%
Horicon 2	34.5%	23.0%	12.9%	10.7%	6.4%	4.7%

Table 14. *Number of birds harvested per permit holder and active permit holder by zone. Hunter numbers derived from applications, questionnaires and 1-800 registration.*

Zone	Birds/Permit Holder	Birds/Active Permit Holder
Horicon	0.67	1.27
Exterior	0.46	N/A

Table 15. *Exterior Zone season bag derived from mandatory reporting data.*

Bag	Number of Hunters	Percent
0	73,636	89.45%
1	2,585	3.14%
2	2,655	3.23%
3	811	0.99%
4	848	1.03%
5	349	0.42%
6	393	0.48%
7	209	0.25%
8	190	0.23%
9	98	0.12%
10	109	0.13%
11	67	0.08%
12	75	0.09%
13	41	0.05%
14	32	0.04%
15	34	0.04%
16	32	0.04%
17	18	0.02%
18	18	0.02%
19	14	0.02%
20	17	0.02%
21	15	0.02%
22	8	0.01%
23	8	0.01%
24	6	0.01%
25	8	0.01%
26	3	0.00%
27	6	0.01%
28	2	0.00%
29	6	0.01%
30	2	0.00%
33	2	0.00%
34	1	0.00%
36	1	0.00%
37	2	0.00%
38	2	0.00%
39	1	0.00%
40	1	0.00%
41	1	0.00%
42	2	0.00%
43	1	0.00%
53	1	0.00%
55	1	0.00%
60	1	0.00%
61	2	0.00%
76	1	0.00%
106	1	0.00%
108	1	0.00%
120	1	0.00%

Table 16. *Percent of time spent hunting private land by zone.*

Zone	No Answer	< 25%	25-49%	50-75%	> 75%
Horicon	48.6%	10.6%	0.9%	1.9%	38.0%

Table 17. *Number of active hunters, percent paying blind access fee, mean days hunted, mean payment per trip, and total access fees paid by zone.*

Zone	Active Hunters	Percent Paying	Mean Days	Mean Payment	Total Paid
Horicon	5,349	26.9%	4.5	$15.54	$100,620.95

Table 18. *Number applicants, active hunters, and birds harvested during the September early Canada goose season.*

Year	# of Applicants	# of Active Hunters	Harvest
1990	19,561	6,408	842
1991	4,772	1,983	712
1992	5,383	2,024	772
1993	2,982	1,636	679
1994	20,724	7,114	1,668
1995	13,343	7,923	4,928
1996	21,378	8,979	10,506
1997	28,761		7,435
1998	29,580		7,627
1999	73,799		6,032
2000	69,716		11,192
2001	74,268		15,952
2002	75,565		11,687
2003	76,728		8,650
2004	76,294		14,007
2005	74,437		13,410
2006	68,152		20,034
2007	66,207		21,760
2008	63,904		24,276
2009	60,567		15,342
2010	55,927		19,900
2011	52,906		18,746
2012	53,596		21,302
2013	55,272		19,407

Table 19. *Early September Canada goose harvest by date (bold numbers indicate weekends)*.

Date of Kill	Reported Kill	Expanded Kill	Cumulative Kill	Percent	Cumulative Percent
09/01/2013	**3,421**	**3,982**	**3,982**	**20.5%**	**20.5%**
09/02/2013	2,101	2,446	6,428	12.6%	33.1%
09/03/2013	409	476	6,904	2.5%	35.6%
09/04/2013	387	450	7,354	2.3%	37.9%
09/05/2013	477	555	7,909	2.9%	40.8%
09/06/2013	594	691	8,601	3.6%	44.3%
09/07/2013	**1,509**	**1,756**	**10,357**	**9.1%**	**53.4%**
09/08/2013	**1,745**	**2,031**	**12,388**	**10.5%**	**63.8%**
09/09/2013	388	452	12,840	2.3%	66.2%
09/10/2013	419	488	13,328	2.5%	68.7%
09/11/2013	505	588	13,916	3.0%	71.7%
09/12/2013	804	936	14,851	4.8%	76.5%
09/13/2013	1,109	1,291	16,142	6.7%	83.2%
09/14/2013	**1,728**	**2,011**	**18,154**	**10.4%**	**93.5%**
09/15/2013	**1,077**	**1,254**	**19,407**	**6.5%**	**100.0%**
Total	**16,673**	**19,407**			

Table 20. *Early September Canada goose harvest by county*.

County	Reported Kill	Expanded Kill	Percent
Adams	129	150	0.8%
Ashland	35	41	0.2%
Barron	515	599	3.1%
Bayfield	98	114	0.6%
Brown	741	863	4.4%
Buffalo	239	278	1.4%
Burnett	161	187	1.0%
Calumet	401	467	2.4%
Chippewa	330	384	2.0%
Clark	227	264	1.4%
Columbia	316	368	1.9%
Crawford	95	111	0.6%
Dane	372	433	2.2%
Dodge	781	909	4.7%
Door	600	698	3.6%
Douglas	75	87	0.4%
Dunn	174	203	1.0%
Eau Claire	64	74	0.4%
Florance	29	34	0.2%
Fond Du Lac	212	247	1.3%
Forest	24	28	0.1%
Grant	71	83	0.4%
Green	136	158	0.8%

County	Reported Kill	Expanded Kill	Percent
Green Lake	57	66	0.3%
Iowa	54	63	0.3%
Iron	75	87	0.4%
Jackson	9	10	0.1%
Jefferson	369	430	2.2%
Juneau	84	98	0.5%
Kenosha	238	277	1.4%
Kewaunee	493	574	3.0%
La Crosse	120	140	0.7%
Lafayette	10	12	0.1%
Langlade	123	143	0.7%
Lincoln	100	116	0.6%
Manitowoc	919	1,070	5.5%
Marathon	555	646	3.3%
Marinette	189	220	1.1%
Marquette	135	157	0.8%
Milwaukee	6	7	0.0%
Monroe	112	130	0.7%
Oconto	356	414	2.1%
Oneida	126	147	0.8%
Outagamie	350	407	2.1%
Ozaukee	170	198	1.0%
Pepin	11	13	0.1%
Pierce	61	71	0.4%
Polk	701	816	4.2%
Portage	242	282	1.5%
Price	88	102	0.5%
Racine	367	427	2.2%
Richland	44	51	0.3%
Rock	188	219	1.1%
Rusk	167	194	1.0%
Sauk	127	148	0.8%
Sawyer	146	170	0.9%
Shawano	132	154	0.8%
Sheboygan	387	450	2.3%
St. Croix	233	271	1.4%
Taylor	254	296	1.5%
Trempealeau	132	154	0.8%
Vernon	92	107	0.6%
Vilas	71	83	0.4%
Walworth	347	404	2.1%
Washburn	254	296	1.5%
Washington	454	528	2.7%
Waukesha	553	644	3.3%
Waupaca	341	397	2.0%
Waushara	123	143	0.7%
Winnebago	483	562	2.9%
Wood	200	233	1.2%
Total	16,673	19,407	

Table 21. *Early September season bag derived from mandatory reporting data.*

Bag	Number of Hunters	Percent
0	51,044	92.4%
1	1,121	2.0%
2	804	1.5%
3	540	1.0%
4	464	0.8%
5	479	0.9%
6	167	0.3%
7	138	0.2%
8	111	0.2%
9	69	0.1%
10	110	0.2%
11	37	0.1%
12	40	0.1%
13	32	0.1%
14	18	0.0%
15	29	0.1%
16	8	0.0%
17	17	0.0%
18	5	0.0%
19	5	0.0%
20	6	0.0%
21	5	0.0%
22	2	0.0%
23	3	0.0%
24	2	0.0%
25	3	0.0%
27	1	0.0%
28	3	0.0%
29	1	0.0%
30	2	0.0%
32	2	0.0%
33	1	0.0%
36	1	0.0%
50	1	0.0%
60	1	0.0%

Table 22. *Percent of successful bags containing 1 or 2 geese.*

Zone	Period	Percent of 1 Kill Bags	Percent of 2 Kill Bags
Horicon	1	52.2%	47.8%
	2	45.2%	54.8%
	All Periods	**50.7%**	**49.3%**

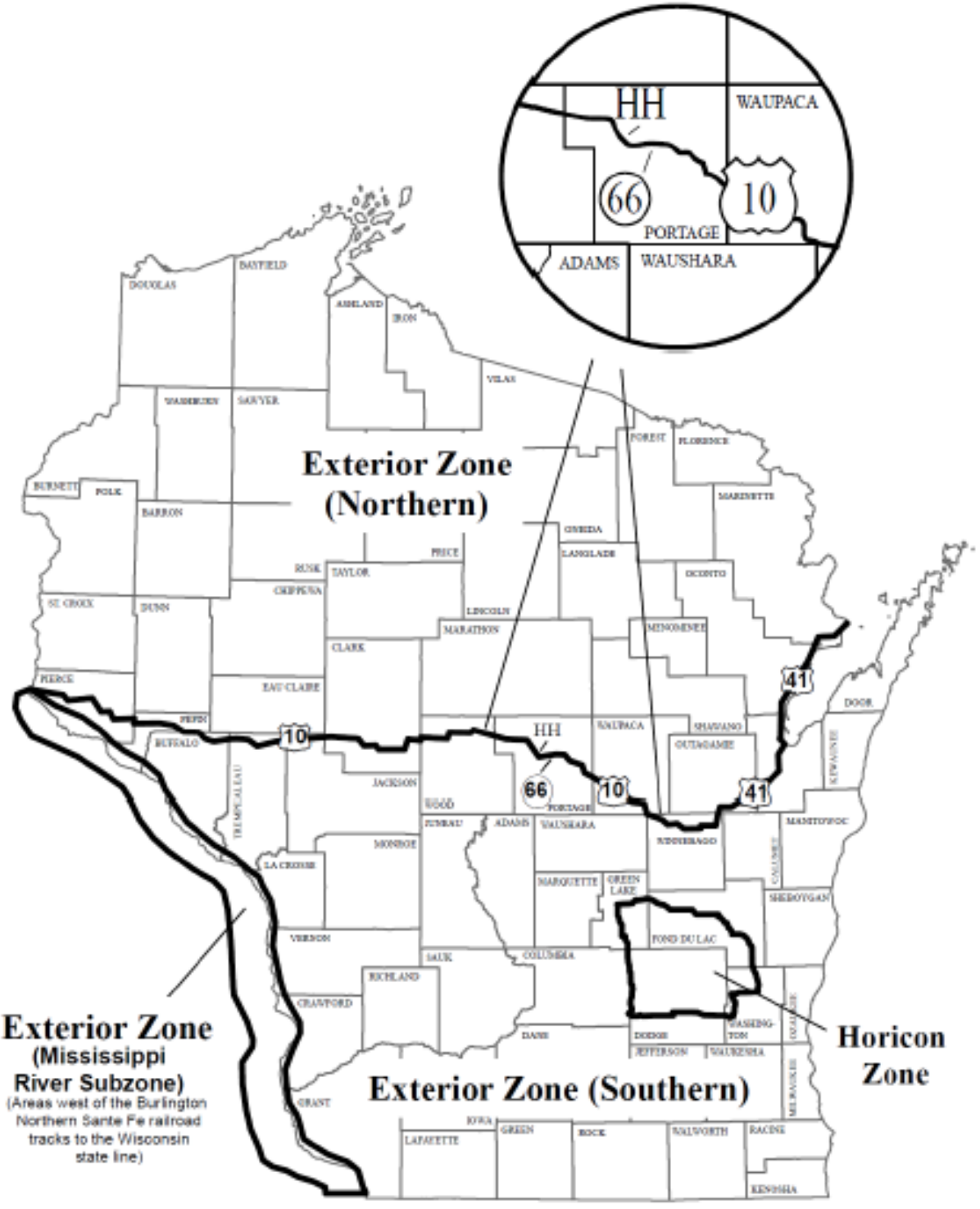

Figure 7. Canada goose management zones and subzones

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